

2023-2078

United States Court of Appeals
for the Federal Circuit

BOXCAST INC.,

Appellant,

— v. —

RESI MEDIA LLC,

Appellee.

*On Appeal from the United States Patent and Trademark Office,
Patent Trial and Appeal Board in No. IPR2022-00066*

REPLY BRIEF FOR APPELLANT

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INTRODUCTION

The '574 Patent *opens* by explaining that conventional live broadcasting systems could not operate autonomously without complex network setup because of an inability to remotely control broadcasting devices across the Internet. Appx101(1:29-34). In contrast to these complicated setups, the '574 Patent describes and claims an autonomous broadcasting system that solves this inability or “Hidden ABD Problem” with a tripart distributed architecture and an over-Internet request-based communication scheme. Nothing like it is in the prior art. Yet the Board bent over backwards to manufacture the '574 Patent’s claimed solution into the combination of Allen, which is *not* over the Internet and thus does not even have the Hidden ABD Problem at all, and Maes, which uses one of the conventional complex-network-setup solutions that a POSITA is specifically directed to *avoid* in the '574 Patent (“port forwarding”). Unable to defend the Board’s positions, Resi’s main argument is to deny that this problem-solution exists in the patent at all. The Board never made such a finding, likely because the Hidden ABD Problem is literally in the first column of the specification. The blocking router that causes the problem, and the solution to the problem, are expressly recited in the claims.

The Board instead devised ways to evade the patent's clear statement of the claimed problem and solution. First, the Board attempted to circumvent Maes uses a conventional router-modification solution for over-Internet communication (port forwarding—the very solution the Board agrees should *not* be used) by adding an unsupported temporal limitation into its construction of “without modification or circumvention” that cabins the prohibition only to times when it technologically cannot even occur. Resi unconvincingly tries to defend this erroneous construction not with record support, but with (1) an argument that the construction is the only possible one despite providing support elsewhere in its Brief for another simple solution and (2) a new grammatical argument that mixes up nouns and verbs in the claim term.

The Board also dismissed incredible correspondence between the owner of Resi's primary reference, Allen, and Patent Owner, BoxCast, proving that BoxCast's claimed invention *was not obvious* to a POSITA at that time. Resi ignored the existence of voluminous evidence linking Allen, his Echo360 system and the '574 Patent and simply claimed there is no evidence. The evidence plainly exists and must factor into the analysis. The Board erred in not considering it.

Finally, perhaps sensing its failure to find the '574 Patent's Hidden ABD Problem or solution in Maes or Allen, the Board held that the prior art did not need to address the problem or even solve it all. This legal failure to consider the

problem *for any reason* manifested in several ways, including (1) finding that all references that have Internet communication are analogous, (2) ignoring critical drawbacks from the proposed prior-art combination that demonstrate no reasonable expectation of success and (3) inferring, assuming and inherently finding numerous claim elements in the art that are simply nonexistent and not viable, let alone necessary, when the problem-at-issue is properly considered.

Resi's tactics to salvage the Board's decision speak volumes. Resi's relies on factual conclusions the Board never reached. *Infra* pp. 4, 24, 25. Resi tells this Court that BoxCast failed to provide evidence for its positions, even where BoxCast's brief provides long string cites of support. *Infra* pp. 14, 25, 29. Resi states that issues are "undisputed," when they are in clear dispute. *Infra* p. 25. Resi argues against positions that BoxCast has never taken. *Infra* pp. 12, 21, 24-25. Resi ignores key arguments that BoxCast did make. *Infra* pp. 12, 17. And Resi asserts that arguments are new and waived because they are not made using identical language used below. *Infra* pp. 17, 18, 24-25, 30-31. These are all hallmarks of a losing position and demonstrate that the Board's decision is unsupportable and should be reversed.

ARGUMENT

A. The Hidden ABD Problem and BoxCast's solution are in the patent.

The main argument woven throughout Resi's Brief is that the '574 Patent's Hidden ABD Problem is not actually described in the Patent or recited in the claims. This position is central to nearly every one of Resi's arguments. *E.g.*, Appellee Br. at 1, 35, 40-43, 44, 51, 59. The Board never made such a finding, opting instead to find numerous ways to evade the problem. Thus, Resi's argument on appeal that the problem is absent from the patent is entitled to no deference. *See In re Gartside*, 203 F.3d 1305, 1311 (Fed. Cir. 2000) (only the Board's factual findings are subject to substantial evidence review) (citing 5 U.S.C. § 706(2)(E)). The argument should be rejected because the problem and solution are clearly in the patent.

1. The problem is unquestionably in the patent.

The Hidden ABD Problem is literally the first thing discussed in the Background of the '574 Patent:

[C]onventional systems, however, have numerous drawbacks.

For example, in conventional systems broadcast devices cannot be controlled remotely when the devices are situated behind a user's firewall [or router].

Appx101(1:30-34). The blocking router that causes this problem is also claimed: “the router prevents remote access to the ABD from outside the router.”

Appx113(26:36-37). BoxCast means nothing more by “Hidden ABD Problem” than what is claimed and described in the specification above as would be readily understood by a POSITA.

Resi also denies that the technological cause of the problem is the ABD’s private IP address and the basic NAT functionality of routers that bridge private and public networks, while Resi simultaneously calls the same problem “well-known and studied.” Appellee Br. 40-41, 45. Resi never explains any other reason why “devices cannot be controlled remotely” behind a router, Appx101(1:32-34), and admits in the Background section of its brief that POSITAs were well aware that NAT and private IP addresses caused this problem. Appellee Br. 3-6. Resi, like its expert, uses essentially the same language as the claims to explain the problem: “Because devices with private IP addresses are not known by other devices on the Internet, they cannot be easily accessed from outside (i.e., the Internet side rather than the private network side) of the router.” Appellee Br. 4.

Moreover, as Resi explains, a basic function of routers is that they prevent *unsolicited* communications from coming in from the public Internet. Appellee Br. 3-6. Every one of the conventional solutions in the patent, Appx101(1:35-2:2) (port forwarding, DMZ, VPN), was used to allow unsolicited communications to pass

through a router for remotely controlling devices behind the router. Appx101(1:32-34). The claimed ABD receives only *solicited* communications (after a request) to allow the scheduling server to remotely control the ABD based on a user-set schedule.

Resi first argues that the *shorthand* for this problem that BoxCast chose for briefing convenience, “Hidden ABD Problem,” does not appear word-for-word in the patent. *See* Appellee Br. 40 (“the word ‘hidden’ never appears in the ’574”). To be clear, BoxCast does not mean, and has never meant, anything more by “Hidden ABD Problem” than the problem quoted above from the patent specification, and also recited in the claims—“the router prevents remote access to the ABD from outside the router,” Appx113(26:36-37)—as it would be readily understood by a POSITA. These words appear in the patent specification and claims and Resi cannot waive them away by redefining the Hidden ABD Problem as something else.

Resi additionally mischaracterizes the ’574 Patent in arguing that the “WAN IP address of its ABD is registered with a server, and hence not *hidden*.” *Id.* (citing Appx102 at 4:42-46). The record below is clear, including citations to manuals from numerous major router manufacturers, that the term “WAN IP” refers to the public-facing IP address of the *router* and not the private address any device (e.g., an ABD) that is hidden behind the router. Appx4672-4674(¶¶42-44 & n.4) (citing

Appx5126, Appx5131-5132, Appx5141, Appx5143, Appx5148); *see also* Appx479(n.4). The patent itself states that “WAN IP” is the address of the ABD’s “network” and “from which traffic *appears* to originate,” not the actual address of the ABD. Appx108(16:61-67). Resi ignores that language.

Finally, Resi contrarily argues that the Hidden ABD Problem is “generic and describes every device situated behind a router/firewall on the Internet.” Appellee Br. 41. But BoxCast never claimed to have invented the problem, only a particular way of solving it for a particular kind of system (ABD requests for over-Internet remote control of the ABD for autonomous broadcasting). The Board erred in finding the solution obvious without understanding or considering the problem.

2. *The solution is claimed and unique.*

The ’574 patent’s claimed solution to the Hidden ABD Problem is also key. The claims are not just addressing the Hidden ABD Problem generally but rather in the specific context of *remote control* of an ABD behind a router. Appx101(1:33). This distinction is critical to understanding why BoxCast’s use of requests, in combination with other aspects of the claims, is novel and nonobvious and why, as the patent explains, prior art *remote control* systems used complex router modification and circumvention to overcome the Hidden ABD Problem rather than the claimed method.

The '574 Patent is directed to an “autonomous broadcasting system.” Appx70(title). As Resi agreed in the Petition, “autonomous” means “acting without user intervention.” Appx137. The reason the '574 Patent’s system and method is able to act autonomously is the ability of the schedule server component to remotely control the ABD component across the Internet. In this way, “a user can remotely schedule a broadcasting device to autonomously broadcast video data at a scheduled time, even when the broadcasting device is situated behind a firewall or router.” Appx102(4:43-46). This kind of over-Internet remote control, the “Internet of Things,” was in its infancy at the time. Opening Br. 4. Unlike other early IoT systems, however, the claimed system and method uses ABD requests to get schedule start/stop data and effectuate this remote control, rather than using conventional methods like port forwarding, DMZ or VPN. *See* Appx4670-4671(citing Appx5055) (SlingBox used port forwarding).

Nowhere in the record (other than the '574 Patent) is there any disclosure or suggestion of using requests as a means of *persistent* communication needed for *remote control*. This is because, as the '574 Patent explains, such systems would require “frequent requests” to ensure inbound communications are not missed or blocked. Appx109(18:2); Appx4686-4687(¶66). The need for *frequent* requests creates a host of serious drawbacks that deter using requests from the controlled device for remote control, including network bottlenecks, lag, increased cost and

complexity and security vulnerabilities. Appx4687-4689(¶¶67-70). A POSITA designing such a system would have to engage in complicated planning to find a suitable balance between these obstacles, as the '574 Patent did. *Id.*(¶66) (citing Appx109-110(18:63-19:29)). Unlike the Patent, the prior-art record never provides any indication or direction as to how to implement a request-based remote-control system in light of these drawbacks.

That is why the exclusive use of ABD requests is not a “conventional” solution to the problem that “broadcast devices cannot be *controlled remotely* when the devices are situated behind a user’s firewall [or router].” Appx101(1:32-34). There was no reason for a POSITA to endure these drawbacks in lieu of using conventional means of remote control other than the reason explained only in the '574 Patent—to make setup and use easier for the *end user*. Appx101(2:54-57). The Patent’s image of BoxCast’s actual scheduler website says it best: “Simple. Plug-in the cables and schedule your events at BoxCast.com--everything just happens like it should.” Appx96.

Resi tries to confuse the issue by pointing to the patent’s use of HTTP as the mechanism for its requests. Appx109(18:49-59). Resi highlights HTTP communications overcoming the Hidden ABD Problem for one-off communications initiated by a user from within the firewall or router, like clicking on a webpage and getting a response. Appellee Br. 5-6; Appx2240-2241(¶70). But

HTTP alone does not solve the Hidden ABD Problem *for remote control*. The patent leaves no doubt when it discloses that even the conventional solutions for remote control, like port forwarding, still used HTTP. Appx101(1:37-41).

Something more than just HTTP is needed. In the '574 Patent, that something is initiating communications from the ABD inside the router by using requests for persistent control by an outside device.

There is no question that the Hidden ABD Problem is in the Patent, both the specification and the claims. So is its solution—persistent communication via frequent requests from the ABD. The Board's refusal to address the problem head-on, and failure appreciate the claimed solution, led to numerous errors that require reversal.

B. Resi cannot defend the Board's “without any modification to or circumvention of the router” construction.

The Board construed “without any modification to or circumvention of the router” so that the limitation only applies if *the ABD itself* performs the modification or circumvention *during* a livestream. Appx14, Appx49. In other words, the limitation does not apply to any modifications or circumventions performed prior to a livestream or by humans, which is the only time and way those actions are described as being performed in the '574 Patent. The Board's construction thus flatly contradicts the patent and cannot be correct. Opening Br.

25-29; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc).

Resi's attempts to defend the Board's clearly erroneous construction only highlight the construction's flaws.

Resi first argues that the Board's construction is the "only way" for the claim to make sense. Appellee Br. 28. Resi's own "Technical Background" explains precisely how the claim makes sense without the Board's construction. Specifically, Resi explains that it is a basic feature of routers and firewalls that they prevent *unsolicited* communications from passing through to internal devices. Appellee Br. 4-6. There is no "inconsistency" in the claim because *every* communication to the ABD in the claims is *solicited*, i.e., it requires an ABD request. Appx113-114. But-for performing the claimed request step, the router would block communications from reaching the ABD. No convoluted temporal limitation is needed. BoxCast never had the reason or opportunity to provide this simple explanation to the Board because both parties advocated for either no construction or plain meaning. Opening Br. 29-30.

Resi has no response to BoxCast's argument that the Board's construction is technologically impossible because router modifications cannot happen mid-stream. Opening Br. 26-28. Resi just calls the argument "incorrect," but never explains why. Appellee Br. 28. Resi also asserts the Board "consider[ed] multiple parts of the specification" in reaching its construction but does not provide a single

cite in its brief beyond the claims themselves. Appellee Br. 27-30. Resi further misstates BoxCast's argument on the desire to avoid complex network setup as the "'574 [Patent] . . . prohibits modifications to the router during the *initial router setup.*" Appellee Br. 29 (emphasis added). BoxCast never made any arguments about "initial *router* setup" because the router is part of the network environment and not the system. The system is the ABD, scheduling server and media servers, which the '574 Patent discusses in detail. Appx106-107(11:42-13:30). The patent seeks to avoid network tinkering for setup of the *broadcasting system* (i.e., installation of the *ABD*). Opening Br. 26-28. The notion that "[e]very router needs configuration" (i.e., at the factory) to work, Appellee Br. 29-30, is a red herring that is not in the patent and has no relevance to construing the term.

Finally, Resi's attempt to defend the Board's holding that the claim prohibits only modification performed by *the ABD itself* is most telling. The Board provided no explanation whatsoever for this part of the construction, which was propounded only in its analysis of Maes. Appx49. With complete disregard for *Phillips*, Resi looks at the claim term in a vacuum and argues that grammar rules require this perverse construction that was never advocated below. Appellee Br. 30. It is not relevant that the "subject of the sentence is 'the ABD,'" *id.*, because "modification" and "circumvention" are not verbs, they are nouns. There is no verb in the sentence requiring that the ABD create the "modification" or

“circumvention,” and the Board never provided this wrong grammatical reasoning below. More importantly, the examples of modification or circumvention described in the specification are performed by an “information technology (IT) specialist,” Appx101(1:61), and there is no example in the specification of the ABD itself performing a modification or circumvention of a router. The Board’s construction directly contravenes *Phillips* by running contrary to every example in the specification.

The Board expressly relied on its added temporal limitation to hold that the prohibited port forwarding in Maes could be ignored because it is performed before communications take place. Appx49. As BoxCast already explained, Opening Br. 29-33, and further *infra* pp. 25-29, reversal of Board’s construction vitiates a key finding for Maes (and the prior art combination) and requires reversing obviousness over Allen and Maes.

C. The secondary considerations evidence is powerful and clearly relevant to the grounds.

The Echo360 evidence is devastating to Resi’s obviousness grounds. To avoid it, Resi buries its head and pretends that a multitude of evidence linking Echo360 to both Allen and the ’574 Patent claims does not exist. Appellee Br. 30-31. It exists in spades. Before even getting into specifics, there is no better source

linking Echo360 to Allen than Mr. Geoff Allen himself, who, as the inventor of the Allen reference and founder of Echo360 wrote:

As founder and CEO of Echo 360, Geoff *conceived and designed* both the first-generation *lecture capture system* (initially known as Apresso classroom) as well as its current next-generation platform – the Echosystem – which is leading a *campus-wide* enterprise *lecture capture platform*, including the world’s first *purpose-built capture appliance*.

Appx4647 (emphasis added). Mr. Allen’s statement links his “conceived” Echo360 system to his patent application (Allen) that, in the very first sentence of its description explains “[a] *multimedia capture device* (MCD) is a device configured to capture, process store and/or send real-time media signals . . . of, for example, *an in-progress classroom presentation.*” Appx2500(¶1015) (emphasis added). Allen and Echo360 are both campus lecture capture systems centered around specific lecture capture devices developed by the same person at the same time. This statement also directly links Echo360 to the claimed ABD (at least according to Resi).

Resi and the Board wave away the YouTube video cited and discussed by BoxCast’s expert, which reveals several specific features linking Echo360 to Allen, on the basis that the expert did not himself expressly compare those Echo360 features to Allen or the patent. Appellee Br. 31 (citing Appx51). But this Court does not require expert linking testimony. *See Perfect Web Techs., Inc. v.*

InfoUSA, Inc., 587 F.3d 1324, 1329 (Fed. Cir. 2009) (“In many patent cases expert testimony will not be necessary because the technology will be easily understandable without the need for expert explanatory testimony”) (quoting *Centricut, LLC v. Esab Group, Inc.*, 390 F.3d 1361, 1369 (Fed.Cir.2004)). Here, neither Resi nor the Board explain why an express statement from an expert, stating what is already clear from the record, was needed for the Board to find a relationship between Geoff Allen’s patent application and his Echo360 product and the ’574 Patent claims. The Board’s holding is a clear and reversible error of law because it was premised on a lack of expert linking testimony, despite otherwise sufficient underlying evidence.

The YouTube video provides actual evidence that further strengthens the nexus. As BoxCast’s expert explained, the video demonstrated that Echo360 was a lecture capture system with MCDs just like Allen, had a schedule controller that communicated with the MCDs, just like Allen, and uploaded captured media (albeit audio only) to a server just like Allen. Appx4753(¶¶170-71). This evidence also links Echo360’s features to the ’574 Patent through Resi’s own arguments. *Resi* asserts that the MCDs of Allen (and thus Echo360) are similar to the claimed ABD. Appellee Br. 44. *Resi* asserts that scheduler of Allen (and thus Echo360) is similar to the claimed scheduling server. *Id.* *Resi* asserts that the media upload of Allen (and thus Echo360) is similar to the claimed livestreaming. *Id.* at 61. Again,

it is difficult to grasp how Resi can simultaneously argue these same features are in the '574 Patent claims for Allen but not Echo360.

Resi is also wrong on the standard of review: while the Board may get deference in its “weighing of the [objective] evidence before it,” Appellee Br. 31 (quoting *In re Inland Steel Co.*, 265 F.3d 1354, 1366 (Fed. Cir. 2001)), the Board never *weighed* the evidence here. Instead, the Board *excluded* the evidence completely on the legally erroneous proposition that expert linking testimony was needed. Appx51. The Board also did not consider the Echo360 evidence for purposes other than secondary considerations, for example, for a POSITA’s understanding of Allen, where no nexus is required at all. *Scripps Clinic & Rsch. Found. v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991). Resi had no response for that error other than to say “*Scripps* is not related to secondary considerations,” Appellee Br. 35, which is the whole point. Echo360 directly disproves many assumptions the Board made about Allen’s teachings (i.e., the Board assumed Allen has features that its actual embodiment clearly does not) and Resi does not explain how it was permissible for the Board to ignore Echo360 in that context. BoxCast made this argument below—it is not waived. *E.g.*, Appx665.

It bears repeating just how damning the Echo360 evidence is—evidence *from* the owner of Resi’s primary reference distinguishing BoxCast’s invention over the system described in that reference. Opening Br. 39 (citing Appx4432-

4443). Resi also now argues that BoxCast “waived” this argument because it did not use the term “praise” to describe the same evidence below, even though BoxCast relied on the that evidence specifically as objective indicia of nonobvious. Appx492, Appx525. Echo360’s emails praising BoxCast’s system were the second exhibit BoxCast filed in the IPR (Exhibit 2002) and were discussed in the introduction of BoxCast’s preliminary response. Appx247. Without explanation, the Board did not address *any* of BoxCast’s secondary considerations arguments or evidence in the Institution Decision, Appx403-415, despite it being a prominent argument in BoxCast’s Preliminary Response. Appx299-302.

One party’s praise for another’s achievement is simultaneously a sign that they themselves failed to achieve it. And this is exactly what BoxCast argued below, that Echo360 came to BoxCast because they failed to make plug-and-play live streaming system themselves. Appx492. Resi does not refute BoxCast’s evidence that its praised product embodies the claims. Opening Br. 37 (citing Appx4500-4501, Appx4545(¶42)).

Graham set forth a non-exhaustive list of types of objective indicia of nonobvious and never required that such evidence be characterized only as one type or another. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). No matter how it is characterized—failure of Allen/Echo360 to achieve the invention, evidence of long-felt need for the invention, or praise or success of BoxCast and

the '574 Patent—BoxCast undoubtably argued below that the emails were relevant as secondary considerations that '574 Patent's claims are not obvious. The fact that it shows nonobviousness through several of the Court's categories of indicia only demonstrates its strength.

Finally, Resi tries to dismiss the emails by arguing that none of the praised *advantages* of the invention are recited in the claims. But “[c]ommercial success and industry praise are recognized evidence of nonobviousness[] for the way persons in the field of an invention perceive its *advantages*.” *Oren Techs., LLC v. Proppant Express Invs. LLC*, No. 2019-1778, 2021 WL 3120819, at *5 (Fed. Cir. July 23, 2021). These advantages are all *direct results* of claimed features. The “very plug & play”, “very easy to set up” and “very easy and intuitive” praise comes directly from the claimed use of requests to overcome the Hidden ABD Problem in contrast to the complex conventional methods of the time. Opening Br. 39. And “high quality” streams are a result of the ABD’s optimized hardware for video compression. *Id.* Resi again does not refute evidence that BoxCast’s praised product is the invention of the '574 Patent. Opening Br. 37. Resi thus fails to explain why the Board was justified in *completely* ignoring this evidence. The Board’s failure warrants reversal.

D. The Board committed fundamental legal error in refusing to consider the claimed problem being solved by the '574 Patent.

The Board's failure to appreciate the '574 Patent's problem-solution permeated its Decision and led to numerous other errors. These include (1) finding that all references that have Internet communication are analogous, (2) ignoring critical drawbacks from the proposed combination that demonstrate no reasonable expectation of success and (3) inferring, assuming and inherently finding numerous claim elements in the art that are not necessarily present when the problem-at-issue is properly considered.

Critically, obviousness requires more than the sum of parts and must consider the evidence in totality. *Volvo Penta of the Americas, LLC v. Brunswick Corp.*, 81 F.4th 1202, 1215-16 (Fed. Cir. 2023) (citing *Brown & Williamson Tobacco Corp. v. Philip Morris, Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000)). The fact that there are so many errors and that nearly every claim limitation is at best weakly disclosed through inference, inherency and assumption adds up to weigh heavily against a finding of obviousness. The Board further erred by considering these issues in a vacuum and not considering their combined strength as a whole.

1. *Maes is not analogous art because “the internet” is not a field of endeavor and Maes does not solve any problems of the ’574 Patent.*

Resi fails to support the Board’s finding that Maes is analogous art. Resi first argues Maes has the same function as the ’574 Patent because the patent involves live Internet broadcasting and Maes “transmits real-time conversational content from one device to another device over the Internet.” Appellee Br. 36. It is hard to imagine a more obfuscated way to describe “phone calls,” which is the relevant function disclosed in Maes. Appx4703-4704(¶95). The only thing in common about the function of the ’574 Patent and Maes is that they transmit data over the Internet. As to structure, Resi points to the fact that both Maes and the ’574 Patent use the HTTP protocol and have “routers or gateways,” while simultaneously arguing that HTTP and routers are basic features of standard Internet communications that would likely exist in any modern invention that connects to the Internet. Appellee Br. 3, 5-6. The only thing Maes and the ’574 Patent have in common is basic features of communicating over the Internet, and that is not sufficient to find they are in the same field of endeavor. *Cf. In re Nat. Alternatives, LLC*, 659 F. App’x 608, 614 (Fed. Cir. 2016); *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992).

BoxCast is *not* arguing, as Resi asserts, that Maes needs to be “*identical*” to the ’574 Patent to be analogous art. Appellee Br. 38. Rather, the art must have

“essentially the same function and structure.” *In re Deminski*, 796 F.2d 436, at 442 (Fed. Cir. 1986). Maes’s phone system is nowhere close and the Board made no finding as to why a POSITA would look to Maes’s phone system for autonomous broadcasting solely because it has basic Internet components like HTTP and firewalls. The Board’s analogous art finding lacks substantial evidence.

2. *The combination of Allen and Maes cannot fail to solve the ’574 Patent’s claimed problem and still render the claims obvious.*

Outside the ’574 Patent, the record nowhere shows remote control of a device over the Internet and behind a router by means of persistent requests from that device, as the claims require for autonomous livestreaming. Resi now argues the Board’s ultimate finding is supported by alleged common knowledge of a POSITA, evidenced through background references and Resi’s expert. Appellee Br. 53. But this is contrary to the Board’s simultaneous finding that it did not need to address drawbacks that refute a reasonable expectation of success because the entire problem-solution was taught in Allen. Appx48-49. If, as Resi argues, support for the Board’s decision only exists outside Allen, then failure to consider the drawbacks of using the claimed invention was clear legal error. *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1332 (Fed. Cir. 2019); *Arctic Cat Inc. v. Bombardier Recreational Prod. Inc.*, 876 F.3d 1350, 1363 (Fed. Cir. 2017).

These drawbacks also emphasize the Board's failure to find reasonable expectation of success in the Allen-Maes combination. The record demonstrates that the claimed request-based method required a POSITA to engage in considerable complex balancing between efficiency, cost and lag. Appx4686-4689(¶¶66-70). The '574 Patent squarely addresses these concerns with specific examples and techniques to reduce communication size. Appx109-110(18:63-19:29). The record outside the '574 Patent, however, provides "no indication" and "no direction" on how a POSITA would find a successful balance between these drawbacks and this is fatal to the Board's obviousness finding. *Grunenthal GMBH v. Alkem Lab'ys Ltd.*, 919 F.3d 1333, 1341-45 (Fed. Cir. 2019). Resi also tries to quash these drawbacks by arguing that they were "well-known and studied." Appellee Br. 45. There is no evidence for that in the record and Resi cites only to statements that HTTP was known, with no mention of the drawbacks resulting from use of frequent requests like decreased efficiency and increased cost and lag. *Id.* HTTP being known is not relevant because even with HTTP, POSITAs were still using conventional methods, not requests, for remote control. *Supra* p. 10.

3. *There was not substantial evidence for Board's findings that multiple claim limitations are inherent or suggested in the prior art.*

The fact the Resi spends the bulk of its brief trying to defend the Board's factual findings in the prior art demonstrates how tenuous those findings were.

Appellee Br. 46-61. While BoxCast is mindful of the high standard for overturning factual findings, Resi's failure to adequately show substantial evidence supporting the Board's findings also warrants reversal due to both the individual findings and the collected weight of their inadequacy.

In trying to support that Allen operates across the Internet, Resi invokes the same genus/species legal error as the Board, arguing that because Allen discloses a wide area network (WAN), and because the Internet is one (public) example of a WAN, that Allen discloses the Internet. *See Metabolite Lab's, Inc. v. Lab'y Corp. of Am. Holdings*, 370 F.3d 1354, 1367 (Fed. Cir. 2004) (quoting *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1262 (Fed.Cir.1989)) ("A prior art reference that discloses a genus still does not inherently disclose all species within that broad category"). This ignores the many problems that arise when migrating from private to public WANs, including ones Echo360 directly encountered and discussed. Appx4753(¶171). Resi then invents a new argument on appeal (not entitled to deference) that because Allen uses "internet protocol (IP)" addresses, it must operate across the public Internet. This argument would never have held up below, especially considering Resi's expert's textbooks explain that IP addresses are used for all networks, public and private. *See Appx5298-5299*. And for Maes, Resi's assertion that BoxCast's argument regarding Maes's port

forwarding is “a new argument,” Appellee Br. 48, is surprising considering it was one of BoxCast’s central arguments below. Appx503-506.

Regarding the claim limitation “router preventing remote access to an ABD,” Resi ignores everything but the word “router” and argues that Maes and Allen inherently have routers. Appellee Br. 49-50. BoxCast actually argued that Allen and Maes lack the full limitation—“*blocking* routers”—i.e., a non-modified router “that would prevent unsolicited communications” to an ABD. Opening Br. 52-53 (emphasis added). Resi points to no such disclosure in Allen or Maes. Instead, Resi incredibly claims “BoxCast does not dispute that Maes (or Maes plus Allen) discloses a router preventing remote access,” Appellee Br. 50, when, again, one of BoxCast main arguments below (and here) is that Maes *fails* to disclose a router preventing remote access because any routers added to its system would be modified using port forwarding to allow remote access as was conventional at the time for such systems. Appx503-506.

Without the Board’s erroneous temporal construction, *supra* pp. 11-14, the record cannot support a finding that this limitation is in Maes. Maes needs port forwarding to function, which is not only forbidden by the claims but expressly identified as a conventional solution—even when using *HTTP*. Appx101(1:35-43). Resi argues first that Maes does not expressly mention port forwarding (a finding the Board never made), but never *denies* Maes requires port forwarding to work.

Appellee Br. 45-46. Instead, Resi claims BoxCast “cites no evidence” that Maes requires port forwarding. *Id.* BoxCast’s brief cited myriad sources stating that SIP-based phone systems at the time, like Maes, required port forwarding, including:

- Two different standards documents for SIP, Appx5249, Appx5273;
- A technical article specifically for voice-over-IP phone systems like Maes that use SIP, Appx5274-5278;
- BoxCast’s Expert discussing the above and more, including an entire software system built to alleviate SIP’s router problems, Appx4703-4705(¶¶94-97) (citing Appx5283-5293, Appx5305), Appx4749(¶164).

Opening Br. 53. Additionally, Resi’s own expert admitted that SIP-based systems like Maes require *specific* router configuration to work. Appx4861(204:9-24).

Resi (and the Board) also incorrectly focus on Maes’s statement that HTTP “tunneling through firewalls and wireless gateways” would be “guaranteed” for SIP and HTTP. Appellee Br. 52-53 (citing Appx2593 ¶ 229). They seize on the fact that Maes uses HTTP, which is the same protocol the ’574 Patent uses in an embodiment. Appx109(18:49-59). But that is misdirection. The ’574 Patent explains that HTTP was *also* used in conventional solutions like port forwarding. Appx101(1:37-41). The inventive aspect is not using HTTP, it is using requests to initiate all communications from the ABD to avoid port forwarding. The Board was thus mistaken when it found Maes’s use of HTTP “particularly relevant.”

Appx39. HTTP is just a standard piece of Internet technology used for many different reasons, as Resi admits. Appellee Br. 3-6.

The “tunneling” of Maes is discussing something else completely—protocol filtering—which is not relevant to the ’574 Patent. Opening Br. 53-54. Resi’s expert’s own textbook explains that “protocol filtering” (only letting specific protocols through) is the “most common” use of a firewall. Appx5301. That same textbook, also confirms BoxCast’s own expert’s explanation, Appx4367(¶68), Appx4377(¶92), that Maes’s specialized “gateways” are nothing like the kind of Internet-blocking router at issue in the ’574 Patent that would cause the Hidden ABD Problem, but rather are installed on a firewalls and filter based on protocol type. Appx5305.

Maes was emphatic about solving a different problem—enabling the existing two-way telephonic infrastructure to distribute a new technology for speech recognition (“DSR”): “we emphasize the fact that it integrates with existing gateways.” Appx2602(¶320). Maes cleverly implemented this integration “***using the same ports*** and piggy back[ing] on a supported protocol that will be able to pass end-to-end across the infrastructure [i.e., the existing gateways].” Appx2593(¶232) (emphasis added). Maes’s invention was thus its ability to sneak (“tunnel”) a host of different protocols through firewalls and “pass” through gateways that would otherwise drop DSR data. *E.g.*, Appx2566, Appx2572(¶15),

Appx2590-2694(¶¶200-04, 215, 229-33, 239), Appx2598(¶275), Appx2599(¶297), Appx2601(¶308), Appx2602(¶320). But it still required port forwarding (“the same ports”) for the kind of free-flowing, *bidirectional* communication needed for a system like Maes, where client devices must be able to send *and receive* calls at any time:

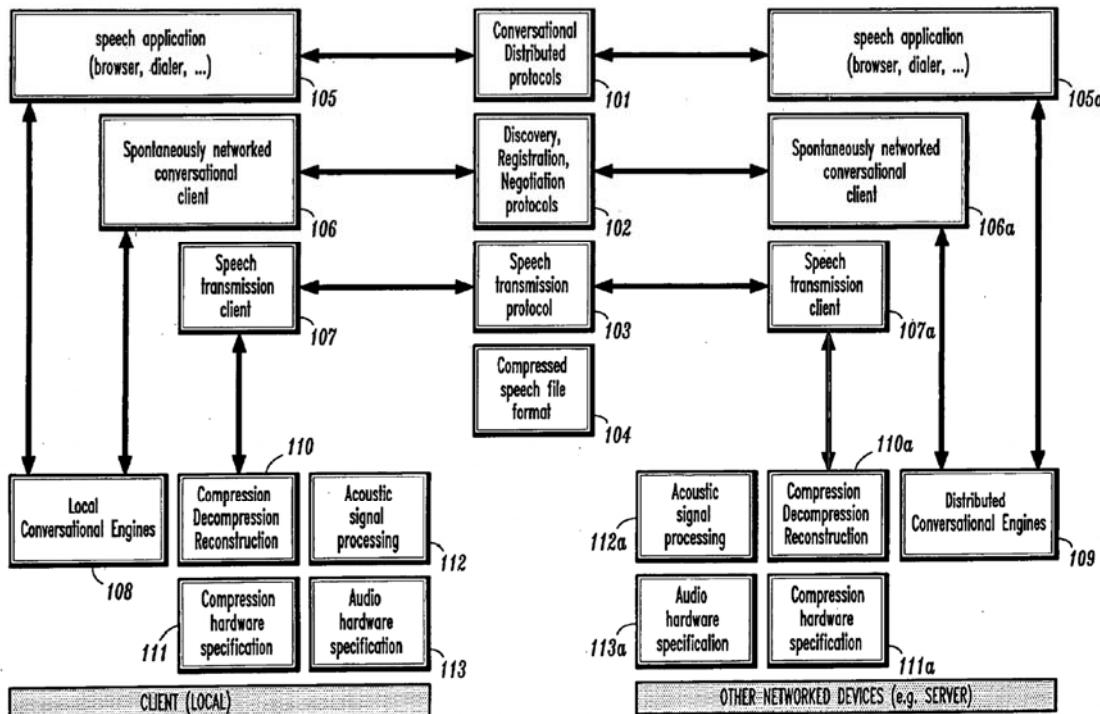


FIG. 1

Appx2544 (all arrows bidirectional). The notion that a phone system could work using requests in the same way as the '574 Patent—i.e., *every* phone on the network would have to send a request every second of every minute of every day to *every other phone* in anticipation of any incoming call from anyone—is absurd. See Appx4686-4687(¶66). There is nothing in Maes or elsewhere in the record to

suggest that Maes could or would have worked this way. To the contrary, the record is overwhelmingly clear that Maes used conventional means—port forwarding—to open up its network for unsolicited communications. Maes cannot teach communications “without modification or circumvention of the router” and without the Board’s construction, there is no obviousness over Maes.

Resi’s also admits there is significant evidence in the record that Allen cannot have the claimed blocking routers but complains that BoxCast only cited the evidence and did not explain each document. Appellee Br. 54. For avoidance of doubt, Allen’s MCDs are not hidden behind a blocking router because they are:

- “prompted” by the control server (unsolicited) to perform functions, Appx2502(¶¶1022-23);
- receiving and responding to unsolicited requests *from the control server*, which is reverse of the ’574 Patent, Appx2514(¶1062); and
- receiving unsolicited periodic “pings” from the control server to check the MCD is functioning, Appx2520-2521(¶1084).

None of these unsolicited communications would get to the MCD through blocking routers so Allen cannot have blocking routers. Appx4726-4732(¶¶129-135).

Resi devotes considerable briefing trying to justify how the Board found the claimed requests, used in the claimed way, in the prior art. Appellee Br. 51-57. Resi appears to admit that the Board relied on inherency to find the claimed

requests in Allen, but argues the finding is supported simply because its expert testified that Allen’s “access” “*would . . . involve a request from the MCD for the schedule and a response from the server.*” Appellee Br. 56 (citing Appx38, Appx2324-2326 (¶¶ 242-247). The law of inherency requires that such findings “may not be established by probabilities or possibilities.” *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1195 (Fed. Cir. 2014) (quoting *In re Oelrich*, 666 F.2d 578, 581 (C.C.P.A. 1981)). Resi acknowledges several *other possibilities* and argues they do not count because they are “*alternative embodiments*” or in “a different prior-art reference.” Appellee Br. 56-57. It does not matter where the possibilities come from—if they explain a way for Allen’s MCD’s to access a schedule without a request, then requests are not *necessary* and the Board’s inherency finding is wrong.

For the claimed ABD and livestreaming, Resi argues that the need for hardware sufficient to livestream video is “not recited in the ’574 [Patent] claims,” but then cites the Board stating that it actually might be in the claims. Appellee Br. 59 (citing Appx12 n.8). Resi then relies on the Board’s apparent waiver argument that BoxCast failed to argue the ABD must have “sufficient power to provide quality livestreaming.” *Id.* BoxCast clearly made this argument in its Response below, even quoting the ’574 Patent’s express disclosure that “if the broadcast device is the general-purpose computer, the computer may not be powerful and/or

fast enough to effectively perform the compression and transmit the video.” Appx484-485 (quoting Appx101(2:21-24)). The Board’s waiver argument is perplexing and wrong. And Resi again tries to dismiss significant evidence that Echo360 was incapable of livestreaming video, which belies the notion that Allen discloses it, since, as explained above, Echo360 was the embodiment of Allen, or at the very least, a contemporary facsimile.

Finally, Resi argues that Maes teaches livestreaming video by mentioning a protocol (RTP) that *can be* used to transmit video. Appellee Br. 60-62. But Resi points to no disclosure of Maes actually using RTP for livestreaming video, which is not surprising considering Maes is a phone system that predates video calling like FaceTime by several years. Appx4669(¶38); Appx4968-4970.

E. The other non-appealed grounds are terminated and cannot be reconsidered on remand.

Finally, Resi argues, with no legal support, that if the Board is reversed on the appealed grounds, the case should be remanded to address other instituted grounds that were not held unpatentable in the Final Written Decision. Those other grounds were terminated with the Final Written Decision and Resi’s failure to appeal them means the decision is final.

The Supreme Court was crystal clear that “the Board’s final written decision . . . must address *every* claim the petitioner has challenged.” *SAS Inst., Inc. v.*

Iancu, 138 S. Ct. 1348, 1354 (2018). And as this Court added, “if the Board institutes an IPR, it must similarly address *all grounds* of unpatentability raised by the petitioner.” *AC Techs. S.A. v. Amazon.com, Inc.*, 912 F.3d 1358, 1364 (Fed. Cir. 2019). Unlike *AC Techs* and its related cases where this Court, in light of *SAS*, remanded for the Board to address *non-instituted* grounds that were never considered at trial, here all the grounds were instituted and considered at trial. The Final Written Decision terminated all grounds and, other than the ground on appeal, did not find the claims unpatentable over any others. The claims thus remain patentable over those other grounds. “In each matter, the Board’s decisions are final, even if erroneous, because they ‘terminated the IPR proceeding’ as to all claims *and all grounds*, and the Board made patentability determinations that affect the patent rights.” *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1361 (Fed. Cir. 2018) (emphasis added) (quoting *Arthrex, Inc. v. Smith & Nephew, Inc.*, 880 F.3d 1345, 1348 (Fed. Cir. 2018)).

The Board’s decision is final. Its choice not to hold the challenged claims unpatentable over the other instituted grounds, after a full trial, means that the challenged claims are patentable over the other instituted grounds. If Resi believes the other instituted grounds were terminated in error, then it was Resi’s prerogative to appeal that issue. Having not done so, the matter is closed. To hold otherwise would be unfair to BoxCast and any similarly-positioned litigant forced to bounce

between the Board and this Court as the Board addresses grounds one-by-one, in piecemeal fashion, on each subsequent remand. According to SAS and this Court, § 318(a) does not permit such practice. If this case is remanded for further review of *the appealed ground*, the Board should not be able to reopen the other terminated grounds that it deemed insufficient for the Final Written Decision the first time and that Resi failed to appeal.

CONCLUSION

This Court should reverse the Board's Decision and find the challenged claims patentable due to the critical claim construction error, refusal to consider key evidence, failure to appreciate the problem, an erroneous analogous art finding and an insurmountable record weighing against obviousness. At the very least, the Decision should be vacated and remanded for the Board to reconsider obviousness with the proper constructions, analysis and evidence.

Respectfully submitted,

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FORM 19. Certificate of Compliance with Type-Volume Limitations

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July 2020UNITED STATES COURT OF APPEALS
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